REMARKS/ARGUMENTS

In view of the foregoing amendments and the following remarks, Applicant respectfully requests reconsideration of the application.

Further to the Examiner's correspondence dated April 11, 2003 requiring restriction and a species election, and further to Applicant's response dated June 1, 2003, claims 27 and 28 have been withdrawn without prejudice. Applicant retains the right to present these claims in a divisional application. The Examiner has not in the current office action provided further comments with regards to the species election. It is therefore assumed that Applicant's traverse of the species election was persuasive.

Claim Amendments

Claim 1 has been amended as shown above to clarify that the upstream pressure system exerts a pressure in the upstream direction against the plurality of edge-glued boards.

Claims 2 through 25 remain as originally filed. Claim 26 has been amended for clarity to provide further functional definition to the subsystems of the invention. Accordingly, claims 1 through 26 are pending in the present application.

Arguments

In the Office Action, claims 1, 3, 9-13, 15, and 26 have been objected to under U.S.C.102(b) in light of Jacquier (UK 746,135). Claims 2, 4-8, and 16 through 25 have been objected to under 35 U.S.C. 103(a) in light of Jacquier when combined with Hill (US 5,617,910) and/or Giesecke (UK 1,109,040, and UK 1,054,881).

Applicant notes that the Examiner has not objected to claim 14, and has assumed not necessarily therefore that claim 14 contains allowable subject matter.

In response to the Examiner's rejection of claim 1 under U.S.C.102(b), Applicant agrees that Jacquier does teach a wood-gluing and clamping system having a horizontal displacement system, a clamping system, and a downstream braking system that operate to enable the production of wood panels. However, as discussed below, the Jacquier system is fundamentally different from both a structural and functional perspective from the system as described by claim 1.

Upstream Pressure System

Most importantly, the Jacquier system does not include an upstream pressure system associated with the braking system for exerting a force in the upstream direction, a limitation defined and clarified in amended claim 1.

↑ means? support?

In the Office Action, the Examiner has indicated that Jacquier includes a plate (35) with a compression spring (37) upstream of the [passageway B created between] channels (44 & 24)

In response, Applicant initially notes these elements to be a pressure system located at the upstream end of the deck, which exert a downward pressure towards the deck (see page 3, lines 121-124).

In contrast, Applicant's "upstream pressure system" (30) is located with the braking system at the downstream end of the deck. The upstream pressure system exerts pressure in the upstream direction (see amended claim 1, and paragraph 48, and Fig 1 of the specification) and provides the unique ability of the present system to maintain a high and continuous interjoint pressure between the edge-glued boards on the deck during continuous assembly of edge-glued boards. As shown in the attached simplified sketch, the unique

← PG PUB?

positioning of force elements provides a pressure-stroke profile as shown in Figure 5 which enables the production of edge-glued boards for use as construction-grade lumber.

One Way Clamping System

Further, the clamping system taught by Jacquier is not a one-way clamping system for opposing the pressure applied by an upstream pressure system, but rather a series of presser plates (40) which are downwardly urged by springs (p3, l.126 - p4 l.1, and Figs 3, 7). In the Jacquier system, boards slide beneath the presser plates which achieve a passive and temporary braking effect as boards are advanced across the deck.

In contrast, Applicant's one-way clamping system (18) actively prevents movement of wood in the upstream direction by virtue of the clamping member (18a) (see paragraphs 57-58, and Fig 1a) that actively engages with the wood surface to oppose the pressure applied by the upstream pressure system, thereby maintaining a high interjoint (horizontal) pressure across the plurality of edge-glued boards even when the horizontal displacement system is disengaged. Applicant's one-way clamping system is therefore distinguished over the clamping system taught by Jacquier, both by the manner in which the two systems engage the wood, and by virtue of the combination with Applicant's unique upstream pressure system.

Again, and as noted above, this combination of upstream pressure system and one-way clamping system enable the application of high and continuous interjoint pressure necessary to produce the construction-grade edge glued product of Applicant's invention.

This difference is clearly shown with reference to Applicant's Figure 5. As shown, the methods of the prior art (including Jacquier) all have the disadvantage of large fluctuations in pressure across the glued boards as they are advanced across the deck. By contrast, Applicant's system provides only minimal fluctuation within an acceptable range, thereby at all

times maintaining clamping pressures across the boards that produce a stronger joint between the boards. As further described in Applicant's Figure 5a, these high inter-joint pressures are initiated as soon as either one or two new boards have been added to the deck (depending on the embodiment employed).

Accordingly, it is respectfully submitted that amended claim 1 is neither anticipated nor obvious in view of Jacquier. As noted above, Applicant has amended claim 1 to emphasize the above distinctions particularly with respect to the direction of forces. Dependent claims 2 through 25 remain without amendment for consideration by the Examiner. As claims 2 through 25 depend directly from amended claim 1, it is therefore submitted that insomuch as it is submitted that claim 1 is patentably distinguished from Jacquier, it is submitted that claims 2 through 25 are similarly distinguished.

Remaining Rejections in view of Jacquier

Notwithstanding the foregoing submission, Applicant offers the following additional remarks with respect to each of the Examiner's remaining rejections in view of Jacquier. The Examiner has objected to claims 3, 12, and 13 which require the additional limitations of a friction plate for applying a downward pressure at the downstream end of the deck, and a panel press system. In response, it is submitted that Applicant's claim 3, 12 and 13 are distinguished over Jacquier for the reasons discussed above by virtue of its dependency on claim 1.

With respect to the Examiner's objection to claim 9, Jacquier does not teach an upstream pressure system for exerting force in the upstream direction, as explained above. Therefore, the location of the upstream pressure system with respect to the braking system, as defined in claim 9, is also novel and inventive over Jacquier.

Claim 10 is dependent upon claim 1, and further defines the one-way clamping system of Applicant's invention. Although Jacquier does teach the use of a passive braking system, Jacquier does not consider a clamping system comprising one-way dogs that resist an upstream pressure applied to the boards, as described above. Accordingly, claim 10 is distinguished over Jacquier.

With respect to the Examiner's objection to claim 11, claim 11 recites that the mechanically actuated clamp must be responsive to the position of the horizontal displacement system. The clamp taught by Jacquier is a passive clamp, and is not actuated by the position of the horizontal displacement system (see Jacquier page 3 line 126 through page 4, line 16) These sections of Jacquier, clearly describe the presser plates 40 as being biased by a spring to create a feed chamber which acts passively to permit the passage of wood pieces. Applicant submits that this distinction, in combination with the above response regarding claim 1 distinguishes claim 11 over Jacquier.

As the Examiner has not made a specific objection to claim 15, Applicant cannot determine which element of the Jacquier invention the Examiner considers to correspond to a longitudinal clamping system. Applicant's longitudinal clamping system as described in claim 15 is for applying pressure to the ends of individual lengths of wood as they are added to the deck. This force is provided for clamping the boards in a longitudinal direction to maintain the integrity of fingerjointing when the boards on the deck consist of fingerjointed pieces of wood. In such case, boards are first created by fingerjointing small pieces of wood, which are then edge-glued and fed onto the deck to be clamped both along their length (for maintaining integrity of fingerjointing of each board) and along their width (for joining along the longitudinal edges as described above). Jacquier does not teach nor suggest using fingerjointed boards, and does not provide a mechanism for active longitudinal clamping. Rather, Jacquier provides

two walls at either side of the deck "so arranged as to provide between their opposing faces a space through which the work or panel in the course of production is displaced" (Jacquier page 3 lines 88-92). Jacquier therefore provides a passageway defined as being perpendicular to the longitudinal axis of the boards for guiding the glued boards across the deck, but does not provide a clamping pressure in this direction. As indicated in Applicant's Figure 2, element 19 provides the longitudinal clamping pressure defined by claim 15.

With regards to claim 26, Applicant has amended claim 26 for clarity, noting that Jacquier does not teach *inter alia* an upstream pressure system for applying force in the upstream direction, and further does not allow for the maintenance of a high inter-joint pressure between edge-glued boards, as discussed in detail above with respect to claim 1.

Section 103(a) Rejections

In regards to the obviousness objections to claims 2, 4-8, and 16 through 25, under 35 USC 103(a), the Applicant respectfully submits that the above claims are not obvious for the reasons discussed above with respect to claim 1, and additionally for the reasons provided below.

The Examiner has stated that claims 2 and 16 are obvious when Jacquier is considered along with Hill. Applicant submits that due to dependency upon claim 1, which Applicant has submitted above as novel and unobvious, claims 2 and 16 should also be so considered.

Applicant further submits with respect to the objection to claims 4 and 6, that the specific use of either a roller and rotary brake, or plates in which a rubber tread rotates around the plates as claimed in combination with the novel and unobvious features of the invention described in claim 1, would not be obvious to a person of skill in the art.

The Examiner has objected to claim 5 on the additional grounds that Gi secke '040 teaches the use of friction plates which amount to a belt wrapped around rollers for effecting smooth movement of the assembled panel. Contrarily, Applicant's claim 5 recites friction plates within the braking system, and the inclusion of rollers in only the lower friction plate. Applicant submits that use of rollers in a thrusting system as described by Giesecke on page 2, lines 93-98 is very different from Applicant's use of rollers in the lower friction plate of the braking system. Specifically, the rollers of the present invention are not for driving wood through the system, but are for facilitating the upstream and downstream movement of the braking system. These rollers are not in any way involved in driving the wood, or in restricting the motion of the wood. The Examiner is directed to paragraph 33 of the description which states "The underside friction block 50a is preferably supported on rollers 54 which allow the friction block to travel upstream/downstream as required. Hydraulic cylinder 52 may be pivoted to allow this movement", and to Figure 1a which shows arrows indicating such movement. Claim 5 recites this limitation - "rollers allowing upstream and downstream motion of the lower friction plate". Applicant submits that the combination of elements recited in claim 1 which is distinguished over the prior art as described above, with the additional limitation of claim 5, clearly distinguish this claim over Jacquier and Giesecke.

Applicant further submits that claims 17 and 18, which are dependent on claim 2, are similarly distinguished. Moreover, Applicant notes that in the Giesecke '881 driving system, the rollers are located within the rubber tread. The Examiner has not cited any prior art which shows the use of rollers that allow the movement of a friction plate portion of a braking system. Applicant submits that in combination with the arguments for the allowing claims 1 and 2, the use of a friction plate and rollers as in claims 17 and 18 is not obvious with respect to the art cited.

The Examiner has additionally objected to claims 7 and 8 under 35 U.S.C. 103(a) in light of Jacquier when combined with Giesecke '881; stating that Giesecke teaches a pressure element/spring acting in the direction of feed (upstream), and further, that Giesecke shows that use of a compression spring in the braking system is known in the prior art. Giesecke describes a system for applying intermittent inter-joint pressures to end-glued boards, joining subsequent dovetailed board ends by applying a temporary pressure across the end joint, after which the pressure is completely released to permit the length of board to advance.

In Giesecke's system, a first board is driven by the feed rollers onto a deck and through a braking system. The braking system clamps the board such that its dovetailed/notched end is situated between the feed rollers and the braking system. The feeding system is continuous, and therefore will deliver another board with a complementary notched/dovetailed end onto the deck to abut the end of the first board. A high pressure is required to overcome the preload of the dovetail, and is provided by the continued operation of the feed rollers, increasing the pressure at the joint of the second board and the first board. As the first board is being held by the braking system, high pressure is created across the end joint, overcoming the preload of the dovetailing and allowing the dovetailed end to be received by the notched end. Simultaneously, the braking system is also experiencing a high pressure equivalent to that experienced at the joint, which is detected by the pressure element (10), located downstream of the braking system, but not in communication with the boards. Once the threshold pressure necessary to join the board ends has been reached, as sensed by the pressure element (10), maintenance of this pressure is not necessary, and the pressure element (10) feeds back to the braking system to release the first board, allowing both boards, now joined, to advance.

Notably:

1) The pressure element (10), is not intended to exert an upstream force on the boards, but is for detecting the downstream force being applied over the joint to control the braking system; and,

2) During advancement of the boards, a substantial reduction in pressure is experienced across the joint, which would be unacceptable if applied to longitudinally edge-glued lumber. In fact, Giesecke specifically states that his invention is "...intended exclusively for the longitudinal connection of workpieces which are only arranged in a row one behind the other..."(p1, l.77).

As a result, Giesecke's system will be effective only when an interlocking joint (such as a fingerjoint), is used to join wood pieces, and is not suitable for use in edge gluing of boards. The fluctuations in pressure inherent in the Giesecke system would be unacceptable in generating the clamping profiles necessary to create an edge-glued joint.

By contrast, and as noted above, the upstream pressure element of Applicant's system provides a continuous upstream force directly to the boards, which is of particular importance when the horizontal displacement system has been disengaged (ie. the pressure across the edge-glued joints would otherwise drop substantially and would not satisfy the object of the invention to provide continuous high inter-joint pressure). This feature is included in Applicant's claim 1 "...upstream pressure system for applying a pressure in the upstream direction to the plurality of boards when the horizontal displacement system is moving from the engaged position to the disengaged position". Applicant's system therefore is capable of exerting a continuous high interjoint pressure across a plurality of boards during both engagement and disengagement of the horizontal displacement system (as shown in Figures

5 and 5a), which provides a very strong joint and allows the resulting glued pieces to be used for construction-grade lumber.

Applicant therefore submits that in light of the above remarks, and in combination with the remarks related to claim 1, upon which claims 7 and 8 depend, that the subject matter defined by claim 8 is not obvious in light of Jacquier or Giesecke '881.

Similarly, claim 19 should not be considered obvious, for the same reasons stated above with respects to claim 7, and additionally for the reason of dependency upon claim 18, which is discussed above.

With respect to claim 20, although Jacquier does teach the use of passive dogs in the braking system, these are neither considered nor taught to be a one-way clamping system, as described more fully above with respect to claim 1. For this reason, and for its dependence on claim 19, the allowability of which is substantiated above, claim 20 should not be considered obvious.

Similarly, Claim 21 has been rejected in light of Jacquier, which the Examiner states includes a mechanically actuated clamp. Again, Jacquier does not teach a mechanically actuated one way clamp for specifically opposing upstream pressure applied to the boards, and Applicants claim 21 is therefore distinguished over Jacquier. Applicant's one-way clamping system is mechanically removed from interaction with the boards once the horizontal displacement system is in operation and is holding the upstream load. The one-way clamping system of Applicant's invention is mechanically actuated once again at such time as the horizontal displacement system is retracted from contact with the boards and an alternative upstream pressure source is required while a new board is added to the deck.

Claims 22 and 24 are objected to for obviousness in light of Jacquier, however for their dependence upon claim 21, which is supported by the above remarks, Applicant submits that claims 22 through 24 are also patentable.

Summary

In summary, it is respectfully submitted that none of Giesecke '881 and '040, Hill or Jacquier teach or suggest a system capable of producing the high interjoint pressures required to produce structural grade adhesive bonding. That is, even in combination, the prior art cited teach systems that are merely capable only of providing instantaneous and temporary joint pressures, which are not suitable to produce the unique continuous adhesive bonding pressures of the Applicant's invention.

Accordingly, Applicant submits that the prior art does not teach the combination of a horizontal displacement system, a braking system for retarding the advancement of boards, an upstream pressure system associated with the braking system for exerting an upstream force on a plurality of boards, and a one way clamping system for opposing the force of the upstream pressure system during disengagement of the horizontal displacement system, which enables continuous production of edge-glued lumber while maintaining a consistent and high inter-joint pressure as defined by claims 1 through 26.

Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted.

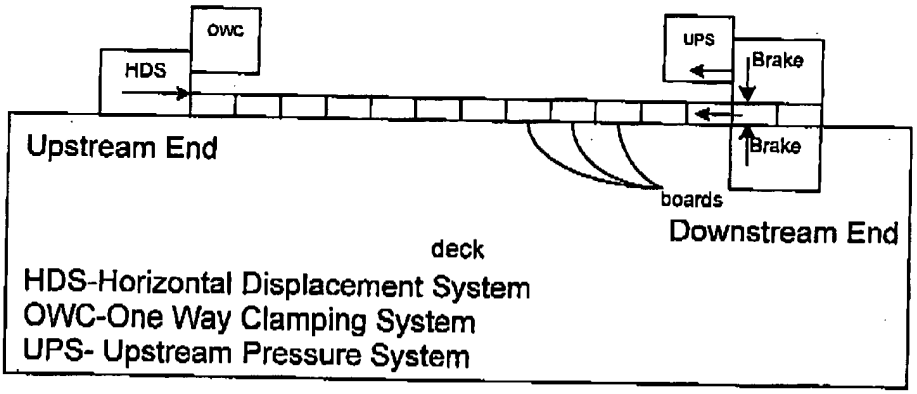
ARH/HM/ldk

COMPARISON SKETCHES BETWEEN THE OPERATION OF APPLICANT'S SYSTEM AND THE JACQUIER SYSTEM

Arrows Indicate Directi n and Strength f Forces

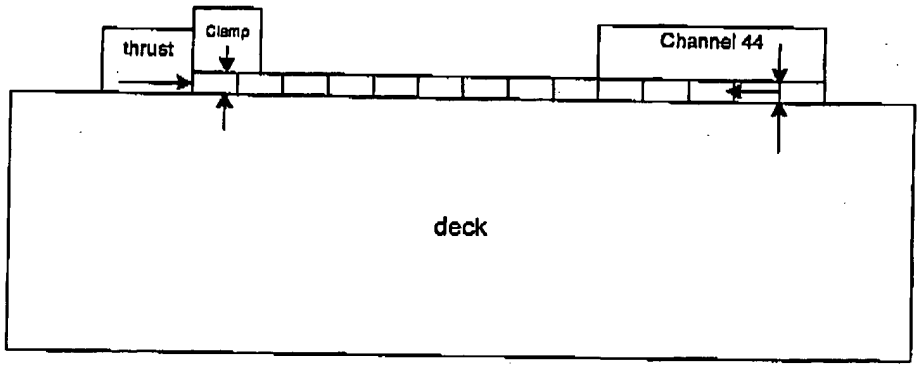
In addition to the sketches, the critical difference b tween the Jacquier system and Applicant's system is shown in Figure 5 which illustrates the difference in interjoint pressure between the two syst ms

APPLICANT'S SYSTEM WHEN HDS IS ENGAGED



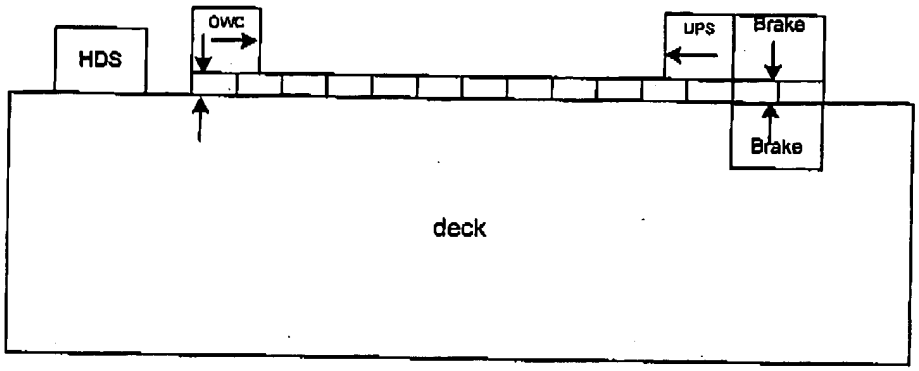
Note:
1. Passive upstream pressure from UPS and Brake is slightly less than the active downstream pressure from the HDS so as to allow the boards to advance
2. Interjoint pressure during HDS Movement is high due to opposing forces parallel to deck surface.

JACQUIER SYSTEM WHEN THRUST MEANS IS ENGAGED



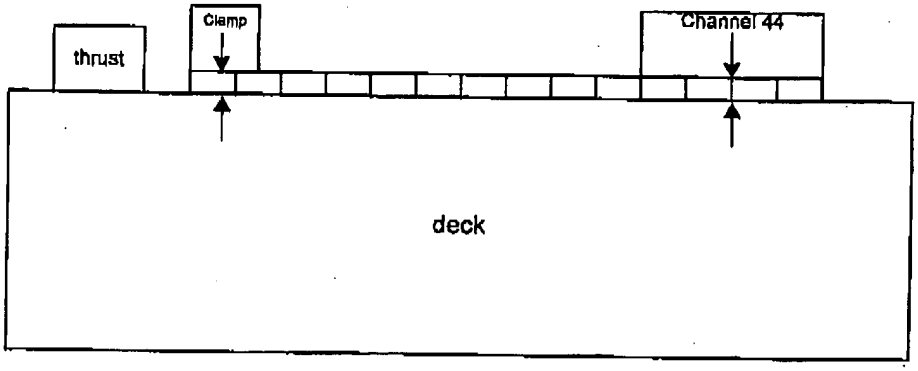
Notes:
1. Upstream force by channel 44 is slightly less than the thrust so as to allow the boards to advance
2. Interjoint pressure is high during thrust due to opposing forces parallel to deck surface

APPLICANT'S SYSTEM WHEN HDS DISENGAGED



Note:
1. As the HDS withdraws and the OWC engages the boards on the deck, the UPS provides an active upstream pressure force against the passive resistance of the OWC
2. Interjoint pressure remains high as opposing forces parallel to the surface of the deck remain.

JACQUIER SYSTEM WHEN THRUST MEANS DISENGAGED



Note:
1. Interjoint pressure is reduced to zero as thrust is removed from upstream end.
2. Neither the clamp nor the channel provide an opposing force.